California Environmental Protection Agency Air Resources Board	LS MTRON CO., LTD.	EXECUTIVE ORDER U-R-059-0016-1 New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-14-012;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engines and emission control systems produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2016	GLGCL01.9L3C	1.9	Diesel	5,000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Electronic Direct Injection, Turbocharger, Electronic Control Module, Exhaust Gas Recirculation, Periodic Trap Oxidizer, Diesel Oxidation Catalyst	Excavator, Tractor, Forklift

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for non-methane hydrocarbon (NMHC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kW-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kW-hr)					OPACITY (%)		
			NMHC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
19 ≤ kW < 37	Tier 4 Final	STD	N/A	N/A	4.7	5.5	0.03	N/A	N/A	N/A
		CERT	--	--	4.0	0.1	0.01	--	--	--

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

This Executive Order hereby supersedes Executive Order U-R-059-0016 dated October 28, 2015.

Executed at El Monte, California on this 28 day of July 2016.

Annette Hebert, Chief
Emissions Compliance, Automotive Regulations and Science Division

U-R-059-0016-1

7/13/16

Engine Model Summary Template

ATTACHMENT

Engine Family	1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
GLGCL01.9L3C	L3C19-T3	L3C19-T3	45@2600	41.2	17.3	111 ft-lb	47.1	12.2	DFI-TC-EGR-ECU-DOC-PTOX
GLGCL01.9L3C	L3C19-T4	L3C19-T4	40@2600	36.7	15.4	99 ft-lb	42.9	11.1	DFI-TC-EGR-ECU-DOC-PTOX
GLGCL01.9L3C	L3C19-T5	L3C19-T5	35@2600	32.1	13.5	88 ft-lb	38.6	10.0	DFI-TC-EGR-ECU-DOC-PTOX
✗ GLGCL01.9L3C	L3C19-T3A	L3C19-T3A	45@2600	41.2	17.3	123 ft-lb	53.6	13.9	DFI-TC-EGR-ECU-DOC-PTOX
✗ GLGCL01.9L3C	L3C19-T4A	L3C19-T4A	40@2600	36.7	15.4	118 ft-lb	52.8	13.6	DFI-TC-EGR-ECU-DOC-PTOX

✗ New Models